

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 January 2004 (15.01.2004)

PCT

(10) International Publication Number
WO 2004/004447 A2

(51) International Patent Classification⁷: **A01K**

(21) International Application Number:
PCT/US2003/020245

(22) International Filing Date: 27 June 2003 (27.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/393,391 3 July 2002 (03.07.2002) US

(71) Applicant (for all designated States except US): **MERCK & CO., INC.** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **QIAN, Su** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).
VAN DER PLOEG, Leonardus, H., T. [NL/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).

CHEN, Howard, Y. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US). **WEINGARTH, Drew, T.** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US). **TRUMBAUER, Myrna, E.** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US). **METZGER, Joseph, M.** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).

(74) Common Representative: **MERCK & CO., INC.**; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).

(81) Designated States (national): CA, JP, US.

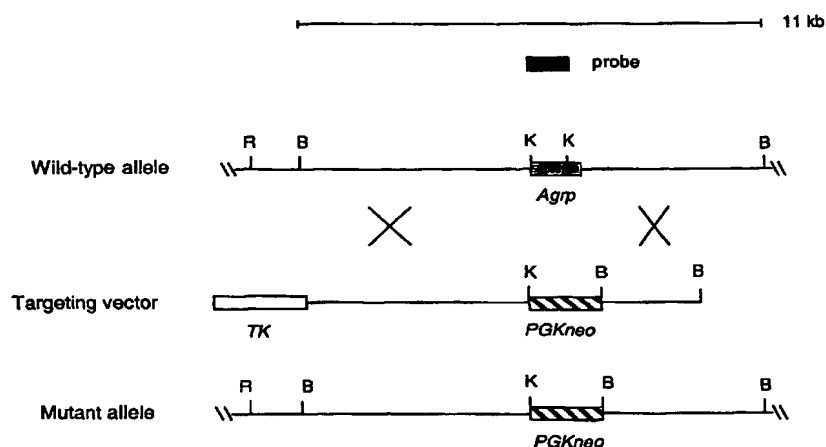
(84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AGOUTI-RELATED PROTEIN DEFICIENT CELLS, NON-HUMAN TRANSGENIC ANIMALS AND METHODS OF SELECTING COMPOUNDS WHICH REGULATE ENERGY METABOLISM



(57) Abstract: Cells and non-human transgenic animals have been engineered to be deficient in the gene encoding agouti-related protein (AgRP). AgRP deficient transgenic animals have a reduced day time respiratory quotient (RQ), indicating that AgRP is involved in the regulation of energy metabolism, resulting in the reduced usage of fat as an energy source. These AgRP deficient transgenic animals can be used to select for and test potential modulators of AgRP. This data allows for methods of screening for AgRP modulators which regulate energy metabolism and caloric utilization. The disclosure also relates to a NPY/AgRP double knockout mouse which can be used to select for and test potential modulators (e.g., agonists or antagonists) of AgRP and/or NPY.